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# Merchant & Gould

An Intellectual Property Law Firm

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**Fax Transmission** | June 15, 2007

TO:

| | |
|---|---|
| Commissioner for Patents<br>P.O. Box 1450<br>Alexandria, Virginia 22313-1450 | FROM: John C. Reich<br><br>OUR REF: 10139.0031-US-01<br><br>TELEPHONE: 612-336-46808 |

Total pages, including cover letter: 12

PTO FAX NUMBER 1-571-273-8300

If you do NOT receive all of the pages, please telephone us at 612.332.5300, or fax us at 612.332.9081.

Title of Document Transmitted: Request for Withdrawal fo Notice of Abondment
Applicant: Scott M. Stole
Serial No.: 10/789,108
Filed: February 26, 2004
Group Art Unit: 3729
Our Ref. No. 10139.0031-US-01
Confirmation No. 7594

Please charge any additional fees or credit overpayment to Deposit Account No. 13-2725. Please consider this a PETITION FOR EXTENSION OF TIME for a sufficient number of months to enter these papers, if appropriate.

By: _____
Name: John C. Reich
Reg. No.: 37,703

I hereby certify that this paper is being transmitted by facsimile to the U.S. Patent and Trademark Office on the date shown below.

June 15, 2007

_____
Signature

June 15, 2007
Date

S/N 10/789,108 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | |
|---|---|---|---|
| Applicant: | SCOTT M. STOLE | Examiner: | CARL J. ARBES |
| Serial No.: | 10/789,108 | Group Art Unit: | 3729 |
| Filed: | February 26, 2004 | Docket No.: | 10139.31US01 |
| Title: | FLEXIBLE CIRCUIT HAVING AN INTEGRALLY FORMED BATTERY | | |

CERTIFICATE UNDER 37 CFR 1.6(d): The undersigned hereby certifies that this correspondence is being transmitted via facsimile to the United States Patent and Trademark Office on June 15, 2007.

By:
Name: John C. Reich

## REQUEST FOR WITHDRAWAL OF NOTICE OF ABONDONMENT

Dear Sir:

This communication is in response to the Notice of Abandonment mailed May 3, 2007, citing Applicants' failure to respond to the Office Action mailed October 18, 2006 (copy of Notice enclosed). Applicants respectfully submit that the holding of abandonment is in error and withdrawal of the abandonment is requested.

Applicants responded to the Office Action mailed October 18, 2006 by filing an Amendment, Request for Extension of Time, and Request for Continued Examination, including fees, on April 18, 2007. Those documents bear a Certificate Under 37 CFR 1.8 showing a mailing date of April 18, 2007. A copy of the Amendment is submitted herewith along with a copy of the stamped return postcard showing the date received was April 23, 2007. In view of this evidence, Applicants request withdrawal of the holding of abandonment.

It is assumed that the petition fee of $130.00 is not required in this case. However, if such fee is deemed to be required, it should be charged to the undersigned's Deposit Account No. 13-2725.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, MN 55402-0903
(612) 332-5300

Date: June 15, 2007

John C. Reich
Reg. No. 37,703
JCReich/jle

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|---|---|---|---|
| 10/789,108 | 02/26/2004 | Scott M. Stole | 10139.31US01 | 7594 |

7590 05/03/2007

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Minneapolis, MN 55402-0903

| EXAMINER | |
|---|---|
| ARBES, CARL J | |
| **ART UNIT** | **PAPER NUMBER** |
| 3729 | |
| **MAIL DATE** | **DELIVERY MODE** |
| 05/03/2007 | PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

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JUN 15 2007

| Notice of Abandonment | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/789,108 | STOLE, SCOTT M. | |
| | Examiner | Art Unit | |
| | C. J. Arbes | 3729 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--*

This application is abandoned in view of:

1. ☒ Applicant's failure to timely file a proper reply to the Office letter mailed on 18 October 2006.
   (a) ☐ A reply was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply (including a total extension of time of _____ month(s)) which expired on _____.
   (b) ☐ A proposed reply was received on _____, but it does not constitute a proper reply under 37 CFR 1.113 (a) to the final rejection.
   (A proper reply under 37 CFR 1.113 to a final rejection consists only of: (1) a timely filed amendment which places the application in condition for allowance; (2) a timely filed Notice of Appeal (with appeal fee); or (3) a timely filed Request for Continued Examination (RCE) in compliance with 37 CFR 1.114).
   (c) ☐ A reply was received on _____ but it does not constitute a proper reply, or a bona fide attempt at a proper reply, to the non-final rejection. See 37 CFR 1.85(a) and 1.111. (See explanation in box 7 below).
   (d) ☒ No reply has been received.

2. ☐ Applicant's failure to timely pay the required issue fee and publication fee, if applicable, within the statutory period of three months from the mailing date of the Notice of Allowance (PTOL-85).
   (a) ☐ The issue fee and publication fee, if applicable, was received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the statutory period for payment of the issue fee (and publication fee) set in the Notice of Allowance (PTOL-85).
   (b) ☐ The submitted fee of $_____ is insufficient. A balance of $_____ is due.
   The issue fee required by 37 CFR 1.18 is $_____. The publication fee, if required by 37 CFR 1.18(d), is $_____.
   (c) ☐ The issue fee and publication fee, if applicable, has not been received.

3. ☐ Applicant's failure to timely file corrected drawings as required by, and within the three-month period set in, the Notice of Allowability (PTO-37).
   (a) ☐ Proposed corrected drawings were received on _____ (with a Certificate of Mailing or Transmission dated _____), which is after the expiration of the period for reply.
   (b) ☐ No corrected drawings have been received.

4. ☐ The letter of express abandonment which is signed by the attorney or agent of record, the assignee of the entire interest, or all of the applicants.

5. ☐ The letter of express abandonment which is signed by an attorney or agent (acting in a representative capacity under 37 CFR 1.34(a)) upon the filing of a continuing application.

6. ☐ The decision by the Board of Patent Appeals and Interference rendered on _____ and because the period for seeking court review of the decision has expired and there are no allowed claims.

7. ☐ The reason(s) below:

C. J. Arbes
Primary Examiner
Art Unit: 3729

Petitions to revive under 37 CFR 1.137(a) or (b), or requests to withdraw the holding of abandonment under 37 CFR 1.181, should be promptly filed to minimize any negative effects on patent term.

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JUN 15 2007

S/N 10/789,108

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | | |
|---|---|---|---|
| Applicant: | Scott M. Stole | Examiner: | Carl J. Arbes |
| Serial No.: | 10/789,108 | Group Art Unit: | 3729 |
| Filed: | February 26, 2004 | Docket No.: | 10139.31US01 |
| Title: | FLEXIBLE CIRCUIT HAVING AN INTEGRALLY FORMED BATTERY | | |

CERTIFICATE UNDER 37 CFR 1.8:
I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail, with sufficient postage, in an envelope addressed to: Commissioner for Patents, Mail Stop RCE, Commissioner for Patents P.O. Box 1450 Alexandria, Virginia 22313-1450 on April 18, 2007.

By:
Name: John C. Reich

AMENDMENT

Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

In response to the Final Office Action dated October 18, 2006, Applicant submits the following:

**Amendments to the claims** are reflected in the listing of claims which begins on page 2 of this paper.

**Remarks** begin on page 5 of this paper.

**Amendments to the Claims:**

This listing of claims will replace all prior versions and listings of claims in the application:

**Listing of Claims:**

1. (Original) A method of forming a battery enabled flexible circuit, the method comprising:

forming a first insulating layer;

positioning at least one battery on the first insulating layer, the at least one battery having at least first and second terminals; and

forming a second insulating layer on the first insulating layer and the at least one battery, the first and second insulating layers forming a flexible circuit board.

2. (Original) The method of claim 1 further comprising:

forming a conductive layer on the first insulating layer for providing at least first and second conductive paths, wherein at least one of the first and second terminals of the at least one battery is in electrical contact with at least one of the first and second conductive paths respectively; and

forming vias in the second insulating layer, the vias being in electrical contact with at least one of the first and second terminals.

3. (Original) The method of claim 2, wherein the forming the conductive layer further comprises forming a conductive layer including copper or a copper alloy.

4. (Original) The method of claim 1, wherein positioning the at least one battery further comprises forming the at least one battery on the first insulating layer using a lamination process.

5. (Currently Amended) The method of claim 1, wherein positioning the at least one battery further comprises forming the at least one battery on the first insulating layer using a semiconductor fabrication process, wherein the semiconductor fabrication process is at least one

of a process selected from the group comprising deposition, epitaxy, etch, lithography, and anneal.

6. (Original) The method of claim 1, wherein positioning the at least one battery further comprises removing a portion of the first insulating layer for embedding the at least one battery therein.

7. (Original) The method of claim 6, wherein embedding the at least one battery further comprises positioning the at least one battery in the removed portion using a lamination process.

8. (Currently amended) The method of claim 6, wherein embedding the at least one battery further comprises forming the at least one battery in the removed portion using a semiconductor fabrication process, wherein the semiconductor fabrication process is at least one of a process selected from the group comprising deposition, epitaxy, etch, lithography, and anneal.

9. (Original) The method of claim 6, wherein embedding the at least one battery further comprises embedding a preformed flexible battery in the removed portion.

10. (Original) The method of claim 1 further comprising forming the at least one battery on the second insulating layer.

11. (Original) The method of claim 1, wherein the forming the first and second insulating layers further comprises forming the first and second insulating layers using a resilient material.

12. (Original) The method of claim 1, wherein forming the first and second insulating layers further comprises forming the first and second insulating layers using a lamination process.

13. (Original) The method of claim 12 further comprising forming the first and/or second insulating layer using a polyimide material.

14. (Original) The method of claim 1, wherein forming the first and second insulating layers further comprises forming the first and second insulating layers using sputter deposition of a polyimide material.

15. (Original) The method of claim 1, wherein forming the first and second insulating layers further comprises forming the first and second insulating layers using chemical vapor deposition of a polyimide material.

16. (Original) The method of claim 1 further comprising forming the first and second insulating layers on a flexible substrate formed using a semiconductor or fiberglass material.

17. (Original) The method of claim 1 further comprising forming electrical components on the second insulating layer.

18. (Original) The method of claim 1, wherein the positioning the at least one battery further comprises positioning a thin-film flexible battery.

19. (Original) The method of claim 2 further comprising removing a portion of the conductive layer using a semiconductor fabrication process and embedding a flexible battery therein.

20. (Original) The method of claim 19, wherein the using the semiconductor fabrication process further comprises etching.

21. (Original) The method of claim 1 further comprising positioning a plurality of batteries in a single conductive layer.

22. (Original) The method of claim 1 further comprising positioning at least one battery in each of a plurality of insulating and conductive layers for providing multiple power sources.

23-41. (Canceled)

## Remarks

The forgoing amendment and following remarks are in response to the Office Action mailed on October 18, 2006 in which claims 1-22 were rejected. A Request for Continued Examination is enclosed with this Amendment. Claims 5 and 8 are amended and claims 23-41 are canceled without prejudice. Claims 1-22 are pending in this application. In light of the following remarks, the applicant respectfully requests withdrawal of the pending rejections and advancement of this application to allowance.

### Restriction Requirement and Canceled Claims

In the Office Action it was requested that non-elected claims 23-41 be canceled. With this Amendment and Response, claims 23-41 are canceled without prejudice. Applicant reserves the right to pursue the non-elected claims in subsequent applications.

The Office Action also requests that Applicant show cause for not previously canceling the non-elected claims. There is no requirement that a patent applicant cancel non-elected claims during prosecution of the elected claims. To advance prosecution of this application, however, applicant has canceled the withdrawn claims without prejudice. Applicant requests withdrawal of the request to show cause.

### Rejection Under 35 U.S.C. § 112

In the Office Action claims 5 and 8 were rejected under 35 U.S.C. § 112, second paragraph. Specifically, the phrase "using the semiconductor fabrication process" was rejected as being indefinite. Applicant traverses this rejection. However, in an effort to advance the pending claims toward allowance, Applicant has amended claims 5 and 8 as suggested in the Office Action. Applicant reserves the right to pursue additional claims directed to the original claim language and/or additional semiconductor fabrication processes.

**Rejection Under 35 U.S.C. § 103(a)**

In the Office Action, claims 1-22 were rejected under 35 U.S.C. §103(a) as being obvious over Isen et al. (U.S. Patent No. 5,763,058). Applicant respectfully traverses this rejection.

The Isen patent is generally directed to a substrate including an electrical circuit component printed directly onto one side of the substrate. (See, for example, title and summary of the Isen patent.) Examples are illustrated in FIG. 8, which shows a substrate layer 53, and electrical circuit components such as a switch SW1, a battery E1, and a capacitor C1. (Col. 11, line 44 – col. 12, lines 25.) The SE electrical circuit components are printed directly onto one side of substrate layer 53. (Col. 11, lines 46-48.) These electrical circuit components, including battery E1, consume space on the side of the substrate, such that additional circuit components cannot be placed at that location. After the electrical circuit has been completed, a protective coating 116 is provided over the top of the finished electrical circuit. (Col. 9, lines 48-51.)

In sharp contrast, the pending application is generally directed to a method of forming a flexible circuit having a battery formed within the circuit board itself. One example is illustrated in FIG. 1, which shows battery 165 formed between layers of circuit board 105.

One of the benefits of having a battery within the circuit board, such as shown in FIG. 1, is that the battery does not take up surface space on the board, leaving more space for the other electrical components and conductors. (Page 7, lines 3-5.) For example, electrical components 150 and 155 can be connected to the circuit board above the battery.

Claim 1 of the pending application recites a method of forming a flexible circuit. The method includes forming a first insulating layer, positioning at least one battery on the first insulating layer, and forming a second insulating layer on the first insulating layer and the at least one battery. The first and second insulating layers form a flexible circuit board.

The Isen patent does not teach, suggest, or disclose a flexible circuit having a battery formed within a flexible circuit board, but rather describes an electrical circuit component printed onto one side of a substrate. Therefore, independent claim 1 is in condition for allowance. Withdrawal of the rejection is requested.

In addition, claims 2-22 depend from claim 1. Accordingly, these claims are also patentably distinct from the Isen patent for at least the same reasons as stated above. Applicant requests withdrawal of the rejection of these claims.

**Conclusion**

In view of this Amendment and Response, Applicant respectfully requests allowance of the pending claims and advancement of this application to allowance. There may be additional reasons that the subject matter is patentably distinct from the cited references, in addition to those discussed herein. Applicant reserves the right to raise any such arguments in the future.

If the examiner believes a telephone conference would advance the prosecution of the application, the Examiner is invited to telephone the undersigned at the below-listed telephone number.

Respectfully submitted,

MERCHANT & GOULD P.C.
P.O. Box 2903
Minneapolis, Minnesota 55402-0903
(612) 332-5300

Date: April 18, 2007

Name: John C. Reich
Reg. No.: 37,703
JCR/BAT:bog

Receipt is hereby acknowledged for the following in the U.S. Patent and Trademark Office:

In re Application of: Scott M. Stole
For: FLEXIBLE CIRCUIT HAVING AN INTEGRALLY FORMED BATTERY
Docket No.: 10139.0031US01 Serial No.: 10/789,108
Filed: February 26, 2004 Due Date: April 18, 2007

Date Mailed: April 18, 2007

- ☒ Transmittal Sheet in duplicate containing Certificate of Mailing
- ☒ Request For Continued Examination and fee of $395.00
- ☒ Amendment
- ☒ Request for Extension of Time for 3 month(s) and fee of $510.00
- ☒ Return postcard

Patent


JReich:nmb